



What is claimed is:

1. ~~A stereoscope that is viewable in the upright and inverted positions consisting of:~~
  - ~~—(a) eyepieces with adjustable interpupillary distance,~~
  - ~~—(b) a two-way mirror separating a front chamber and a rear chamber so that each of said chambers has independent lighting,~~
  - ~~—(c) means of adjusting the relative brightness of left and right sides, and~~
  - ~~—(d) means of controlling the on and off rate of the lighting and the period of the lighting,~~

~~whereby images can be viewed by children and adults for measurement of binocularity, stereopsis, and binocular rivalry.~~

1. A device for testing binocular vision in humans comprising an enclosure with right and left eyepieces and focusing lenses, having a front and a rear chamber, the said front chamber having means to illuminate a backdrop mounted with stereograms, fusible images, and non-fusible images, a two-way mirror separating the backdrop of said front chamber from a rival image pair so that the rival images are illuminated primarily from light from the rear chamber, means for providing light attenuation selectively to the right or left rival image of said image pair, and means of providing sufficient energy to the illuminate the rival images viewed through the eyepieces,

whereby images can be viewed by children or adults for measurement of binocularity, stereopsis, and binocular rivalry.

2. A device according to claim 1 having two adjustable eyepieces housing focusing lenses that move horizontally to accommodate subjects having different interpupillary distances.

3. A device according to claim 1 where the device is hand-held and the images to the right and left eyes can be reversed by inverting the said device.

4. A device according to claim 1 in which the illumination of the rear chamber is flashing where the duration of the flash and the interval between flashes are adjustable.

5. (2) A process of formatting visual stimuli consisting of:

(a) presenting similarly shaped non-rivalrous fusible stimuli of similar binocular luminance and

(b) presenting similarly shaped rivalrous fusible stimuli of different binocular luminance,

whereby binocularly viewed stimuli form distinctive identifiable shapes that transform during perception and distinguish fusion from suppression.

6. (3) process according to claim 2 5 where said non-rivalrous and rivalrous stimuli are composed of complementary colors, viewed through lenses of said complementary colors, and presented on printed material.

7. (4) A process according to claim 2 5 where said non-rivalrous and rivalrous stimuli are composed of complementary colors, viewed through lenses of said complementary colors, and presenting simultaneously or sequentially by a computer program for viewing on a monitor.

8. (5) A process according to claim 2 5 where said non-rivalrous and rivalrous stimuli are composed of complementary colors, viewed through lenses of said complementary colors, and presenting simultaneously or sequentially by a computer program for viewing on a projection screen.

9. (6) A process according to claim 2 5 where said non-rivalrous and rivalrous stimuli are composed of complementary colors, presenting simultaneously or sequentially in a computer program for transmission over

the Internet, and viewing on a monitor through lenses of said complementary colors.

10. (7) A process according to claim 2 5 where said non-rivalrous and rivalrous stimuli are viewed through a stereoscope.

~~8. A pair of lenses of complementary colors with means of attenuating the light passing through one of said lenses and of reversing the sides of said lenses while maintaining the same interocular brightness difference.~~

11. A device comprising of eyeglasses having a right and a left lens of complementary colors with means of asymmetrically attenuating the light passing through said lenses and that said lenses can be reversed as to left and right sides.